CLAIMS

1.- A gable top package (1, 1') for pourable food products produced by folding and sealing a sheet packaging material (2) and comprising a gabled top portion (4) including front and back sloping top wall (10, 11) joined together at a top transversal seal (12), and a pair of side top walls (18, 19) connecting respective lateral edges (15, 16) of said front and back sloping top walls (10, 11), each of said side top walls (18, 19) being obtained by folding a respective portion (46, 47) of the sheet packaging material (2) along predetermined crease lines (31, 33, 42, 44, 50, 51, 54, 55, 56, 65; 31, 33, 43, 45, 52, 53, 57, 58, 59, 66) delimiting a number of panels (A, B, C, D, E, F, G), characterized in that said crease lines (31, 33, 42, 44, 50, 51, 54, 55, 56, 65; 31, 33, 43, 45, 52, 53, 57, 58, 59, 66) are determined among a plurality of possible crease lines designed so as the forming of the side top walls (18, 19) is performed by means of rotations of said panels (A, B, C, D, E, F, G) as rigid bodies about their respective crease lines (31, 33, 42, 44, 50, 51, 54, 55, 56, 65; 31, 33, 43, 45, 52, 53, 57, 58, 59, 66).

2.- A package as claimed in claim 1, characterized in that the desired crease lines (31, 33, 42, 44, 50, 51, 54, 55, 56, 65; 31, 33, 43, 45, 52, 53, 57, 58, 59, 66) for forming the side top walls (18, 19) are obtained by choosing at least the value of a top angle (α) formed, along each side top wall (18, 19), between opposite edges thereof converging to said top transversal seal (12), and the value of the length (l) of one of said front and back sloping top walls (10, 11) along a direction crosswise to said top transversal seal (12).

3.- A package as claimed in claim 1 or 2, characterized by being obtained from an intermediate pack (26) having a prismatic main portion (28) and at least a tapered end portion (29) delimited by said top transversal seal (12), defining said front and back sloping top walls (10, 11) and provided with opposite protruding lateral flaps (13, 14) designed to be folded out of the package top volume available for the food product for obtaining said side top walls (18, 19).

4.- A package as claimed in Claim 3, characterized in that each said lateral flap (13, 14) has one side adjacent to one (10) of said front and back sloping top walls (10, 11) and another side formed by a relative end portion (12a, 12b) of said top transversal seal (12) and positioned adjacent to another (11) of said front and back sloping top walls (10, 11).

5.- A method for dimensioning a gable-top package (1, 1') for pourable food products obtained by folding and sealing a sheet packaging material (2), said package (1, 1') comprising a gabled top portion (4) including front and back sloping top wall (10, 11) joined together at a top transversal seal (12), and a pair of side top walls (18, 19) connecting respective lateral edges (15, 16) of said front and back sloping top walls (10, 11) and obtained by folding respective portions (46, 47) of the sheet packaging material (2) along predetermined crease lines (31, 33, 42, 44, 50, 51, 54, 55, 56, 65; 31, 33, 43, 45, 52, 53, 57, 58, 59, 66) delimiting a number of panels (A, B, C, D, E, F, G), said method being characterized by comprising the step of determining position and extension of said crease lines (31, 33, 42, 44, 50, 51, 54, 55, 56, 65; 31, 33, 43, 45, 52, 53, 57, 58, 59, 66) so as the forming of the side top walls (18, 19) is performed by means of rotations of said panels (A, B, C, D, E, F, G) as rigid bodies about their respective crease lines (31, 33, 42, 44, 50, 51, 54, 55, 56, 65; 31, 33, 43, 45, 52, 53, 57, 58, 59, 66).

6.- A method as claimed in claim 5, characterized in that said step of determining position and extension of said crease lines 31, 33, 42, 44, 50, 51, 54, 55, 56, 65; 31, 33, 43, 45, 52, 53, 57, 58, 59, 66) is performed upon a step of choosing the desired values of at least a top angle (α) formed, along each side top wall (18, 19), between opposite edges thereof converging to said top transversal seal (12), and of the length (l) of one of said front and back sloping top walls (10, 11) along a direction crosswise to said top transversal seal (12).

7.- A method as claimed in claim 6, characterized in that said step of determining position and extension of said crease lines (31, 33, 42, 44, 50, 51, 54, 55,

56, 65; 31, 33, 43, 45, 52, 53, 57, 58, 59, 66) comprises the step of designing, in a portion of said sheet packaging material (2) destined to form the gabled top portion (4) of the package (1, 1'):

- a first transversal crease line (31) delimiting said top transversal seal (12);

- a second transversal crease line (33) forming the horizontal corners of said gabled top portion (4) and positioned at a distance from said first transversal crease line (31) equal to said chosen length (l);

- a number of longitudinal crease lines (42, 43, 44, 45) delimiting, together with said first and second transversal crease lines (31, 33), a couple of first zones (46; 47) defining said side top walls (18, 19) and a couple of second zones (48; 49) defining said front and back sloping top walls (10; 11), said longitudinal crease lines (42, 43, 44, 45) forming with respective portions of said second transversal crease line (33), external to said first zones (46, 47), respective angles equal to said chosen top angle (α); and

- a number of internal crease lines (50, 51, 54, 55, 56, 65; 52, 53, 57, 58, 59, 66), which are located within each said first zone (46; 47) and whose orientation is determined by means of geometric relations obtained by considering that the resulting panels (A, B, C, D, E, F, G) have to be rotated as rigid bodies during the forming of the gabled top portion (4).

8.- A method as claimed in claim 7, wherein said internal crease lines comprise, for each said first zone (46; 47), a couple of first inclined crease lines (50, 51; 52, 53) joined at said first transversal crease line (31) and delimiting an isosceles triangle with said second transversal crease line (33), said method being characterized in that said step of designing said internal crease lines in each first zone (46; 47) comprise the step of calculating the angle (β) formed by each first inclined crease line (50, 51; 52, 53) with the portion of said second transversal crease line (33) defining a side of said isosceles triangle, through the formula:

$$\beta = \text{arctg}\left(\frac{1}{c/2}\right),$$

wherein c references the width of the package to be formed.

9.- A method as claimed in claim 8, wherein said internal crease lines comprise, for each said first zone (46; 47), three second inclined crease lines (54, 55, 56; 57, 58, 59) extending from an intermediate point (60; 61) located within said isosceles triangle to respective vertex thereof, said method being characterized in that said step of designing said internal crease lines comprises the step of calculating the angle (β_2) formed by said second inclined crease lines (54, 55, 56; 57, 58, 59) with respective said first inclined crease lines (50, 51; 52, 53) through the formula:

$$\beta_2 = \frac{\beta - (\theta_1 - \theta)}{2}$$

wherein θ references the angle formed between each longitudinal crease line (42, 43, 44, 45) and the adjacent first inclined crease line (50, 51, 52, 53), whilst θ_1 references the angle formed by each longitudinal crease line (42, 43, 44, 45) with the portion of said second transversal crease line (33) defining a side of said isosceles triangle, after folding of the gabled top portion (4) has been completed.

10.- A method as claimed in claim 9, wherein said internal crease lines comprise, for each said first zone (46; 47), a third inclined crease line (65; 66) extending from said intermediate point (60; 61) to said first transversal crease line (31), intersecting one (50; 52) of said first inclined crease lines (50, 51; 52, 53) and divided by said one of said first inclined crease lines (50; 52) into a first and a second portion (67, 68) forming therebetween angles different from 180° and located outside and inside said isosceles triangle, respectively, said method being characterized in that said step of designing said internal crease lines comprises the step of calculating the angle (γ) formed by said first portion (67) of said third inclined crease line (65; 66) with the portion of said first transversal crease line (31) located inside each said

first zone (46; 47), through the formula:

$$\gamma = \frac{\alpha - \left(2 \operatorname{arcsen}\left(\frac{c/2}{l_1}\right) - \alpha\right)}{2},$$

wherein l_1 references the length of longitudinal crease lines (42, 43, 44, 45).

11.- A sheet packaging material (2) adapted to be folded along predetermined crease lines (31, 33, 42, 44, 50, 51, 54, 55, 56, 65; 31, 33, 43, 45, 52, 53, 57, 58, 59, 66) and sealed for producing a gable-top package (1, 1') for pourable food products, characterized in that said crease lines (31, 33, 42, 44, 50, 51, 54, 55, 56, 65; 31, 33, 43, 45, 52, 53, 57, 58, 59, 66) are dimensioned according to the method as claimed in any one of claims 5 to 10.